

**Attachment 1:**  
**Ecology and Environment, Inc.**  
**EMERGENCY RESPONSE**  
**SITE SAFETY PLAN**

**A. INTRODUCTION**

This plan has been prepared solely for implementation by E&E employees using operating procedures for which they are specifically trained. Any use of this plan by other parties is at their own risk.

**B. GENERAL INFORMATION**

Job Number: 002233.0278	TDD:	Date: 03/13/2008
Prepared By: Ryan Whitchurch	Office: Portland	
Incident location: Portland, Oregon		
Incident description: Radiation gauge breached at Schnitzer Steel. Cs-137 believed to be released at facility.		

**Hazard Summary:**

**Overall Chemical Hazard:**

☐ Serious    ☐ Moderate    ☐ Low    ☐ Unknown

**Overall Physical Hazard:**

☒ Serious    ☐ Moderate    ☐ Low    ☐ Unknown

**C. RESPONSE TEAM**

**Team Members**

**Responsibilities**

ICS Officer Andy Uhrig

Team Leader Ryan  
Whitchurch

Site Safety Officer Andy  
Uhrig

**D. CHEMICAL/SITE CHARACTERISTICS**

Contaminant(s) of concern: Cesium-137

Physical state: ☐ Liquid ☒ Solid ☐ Sludge ☐ Gas/Vapor  
Characteristics: ☐ Flammable ☐ Combustible ☐ Corrosive ☐ Poison  
☐ Explosive ☐ Reactive ☐ Volatile ☐ Biological ☒ Radioactive  
☐ Carcinogen  
Other: \_\_\_\_\_

Physical hazards of the site:

Overhead\_\_\_ Confined Space\_\_\_ Below Grade Trip/Fall\_\_\_ Burn \_X\_ Puncture \_X\_ Noise  
 \_X\_ Cut Splash \_X\_ Heat Stress \_X\_ Cold Stress  
 Other: \_\_\_\_\_

E. HAZARD EVALUATION Physical Hazards:

No.	Task	Physical Hazard
1	Site Survey	Radiation, machinery, scrap metal
2	Decon Support	Radiation

Chemical hazard evaluation: See attached hazard evaluation sheets for data on individual chemicals. Chemical Hazards:

No.	Task	Chemical Hazard	Level of Protection
n/a	n/a	n/a	n/a

All entries into exclusion zone require Buddy System. All E&E field staff participate in medical monitoring program and have completed applicable training per 29 CFR 1910.120. Respiratory protection program meets requirements of 29 CFR 1910.134.

Modification of Standard Levels of Protection:

(Confined spaces must be screened in at least Level B prior to downgrade. Adequate resources must be available before confined space entry is initiated.

Explain: No confined space anticipated. Level C protection to protect against radioactive gamma and beta emitters (Cs-137, particle sizes unknown).

# ACTION LEVELS FOR EVACUATION OF WORK ZONE PENDING REASSESSMENT OF CONDITIONS:

HEALTH AND SAFETY MONITORING						
Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels	
☞ PID (e.g., HNu IS-101) ☞ FID (e.g., OVA 128-GC)					<b>Unknown Vapors</b> Background to 1 ppm: Level D 1 to 5 ppm above background: Level C 5 to 500 ppm above background: Level B >500 ppm above background: Level A	<b>Contaminant-Specific</b>
Oxygen Meter/Explosimeter					<b>Oxygen</b> <19.5% or >25.0%: Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 25.0%: Continue work in accordance with action levels for other instruments.	<b>Explosivity</b> <10% LEL: Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL: Evacuate area; eliminate ignition sources; reassess conditions.
Radiation Alert Monitor (Rad-mini or RAM-4)					<0.1 mR/hr: Continue work in accordance with action levels for other instruments. >0.1 mR/hr: Evacuate area; reassess work plan and contact radiation safety specialist.	
Mini-Ram Particulate Monitor					<b>General/Unknown</b> Evaluate health and safety measures when dust levels exceed 2.5 milligrams per cubic meter.	<b>Contaminant-Specific</b>
HCN/H2S (Monitox)					>4 ppm: Leave area and consult with SSO.	
Draeger Colorimetric Tubes					<b>Tube Action Level Action</b>	

HEALTH AND SAFETY MONITORING					
Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels
Air Monitor/Sampler Type: _____ Sampling medium:					Action Level Action
Personal Sampling Pump Type: _____ Sampling medium:					Action Level Action
Micro R Meter Model 192	1,2	Cs-137	All	Continuous	<2 mR/hr: Continue work in accordance with action levels for other instruments. 2 to 5 mR/hr: In conjunction with a radiation safety specialist, continue work and perform stay-time calculations to ensure compliance with dose limits and ALARA policy. >5 mR/hr: Evacuate area to reassess work plan and evaluate options to maintain personnel exposures ALARA and within dose limits.
Ion Chamber					See micro R meter action levels above.
Radiation Survey Ratemeter/Scaler with External Detector(s)	1,2	Cs-137	All	Continuous	Detector Action Level Action
Noise Dosimeter (Sound Level Meter)					<85 decibels as measured using the A-weighted network (dBA): Use hearing protection if exposure will be sustained throughout work shift. >85 dBA: Use hearing protection. >120 dBA: Leave area and consult with safety personnel.
SAM	1	Cs-137	Source	Targeted	Isotope speciation
Other:					

Decontamination Procedure/solutions:

Personnel: Dry decon, confirm with metres. Spot decon with tape.

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Equipment: Wet wipe decon, confirm with meter.

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Instruments: Wet wipe decon confirm with meter.

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Investigation derived waste materials may not be left on-scene without the written permission of the property owner.

EQUIPMENT/SUPPLIES CHECKLIST			
INSTRUMENTATION	No.	EMERGENCY EQUIPMENT	No.
OVA		First aid kit	
Thermal desorber		Stretcher	
O <sub>2</sub> /explosimeter w/cal. kit		Portable eye wash	
Photovac tip		Blood pressure monitor	
HNu (probe: _____ eV)		Fire blanket	
Magnetometer		Fire extinguisher	
Pipe locator		Thermometer (medical)	
Weather station		Spill kit	
Draeger tube kit (tubes: _____)			
Brunton compass			
Real-time cyanide monitor			
Real-time H <sub>2</sub> S monitor			
Heat stress monitor			
Noise equipment		<b>DECONTAMINATION EQUIPMENT</b>	
Personal sampling pumps and supplies		Wash tubs	
MiniRam dust monitor		Buckets	
Mercury monitor		Scrub brushes	
Spare batteries (type: _____)		Pressurized sprayer	
		Spray bottle	
		Detergent (type: _____)	
<b>RADIATION EQUIPMENT/SUPPLIES</b>		Solvent (type: _____)	
Documentation forms		Plastic sheeting	
Portable ratemeter		Tarps and poles	
Scaler/ratemeter		Trash bags	
1" NaI gamma probe		Trash cans	
2" NaI gamma probe		Masking tape	
ZnS alpha probe		Duct tape	
GM pancake probe		Paper towels	
Tungsten-shielded GM probe		Face mask	
Micro R meter		Face mask sanitizer	
Ion chamber		Step ladders	
Alert monitor		Distilled water	
Pocket dosimeter		Deionized water	
Dosimeter charger			
Radiation warning tape			
Radiation decon supplies			
Spare batteries (type: _____)			
<b>SAMPLING EQUIPMENT</b>		<b>MISCELLANEOUS (Cont.)</b>	

### EQUIPMENT/SUPPLIES CHECKLIST

	<b>SHIPPING EQUIPMENT</b>
	Coolers
<b>MISCELLANEOUS</b>	Paint cans with lids, 7 clips each
Pump	Vermiculite
Surveyor's tape	Shipping labels
100' Fiberglass tape	DOT labels:
300' Nylon rope	"Up"
Nylon string	"Danger"
Surveying flags	"Inside Container Complies ..."
Camera	Hazard Group
Film	Strapping tape
Bung wrench	Baggies
Soil auger	Custody seals
Pick	Chain-of-custody forms
Shovel	Federal Express forms
Catalytic heater	Clear packing tape
Propane gas	Permanent markers
Banner tape	<b>SAMPLING EQUIPMENT</b>
Surveying meter stick	8-OZ bottles
Chaining pins and ring	Half-gallon bottles
Logbooks (        large,        small)	VOA bottles
Required MSDSs	String
Intrinsically safe flashlight	Hand Bailers
Potable water	Thieving rods with bulbs
<b>SAMPLING EQUIPMENT</b>	Spoons
Gatorade or equivalent	Knives
Tables	Filter Paper
Chairs	Bottle Labels
Weather radio	Megaphone
Two-way radios	Cooling Vest
Binoculars	

**EMERGENCY INFORMATION:****LOCAL AND SITE RESOURCES (including phone numbers)**

Ambulance: 911

Hospital:

Directions to Hospital (map attached at the end of this plan): See Attached

Poison Control Center: (800) 732-6985 Police Department: 911 Fire Department: 911

Client Contact:

Site Contact:

On-Site Telephone Number: Cellular Telephone Number: Radios Available:

Other:

<b>E&amp;E EMERGENCY CONTACTS</b>	
E&E Corporate Office (24-Hours)	716/684-8060
Corporate Health & Safety Director, Dr. Paul Jonmaire	716/684-8060 (office)
	(b) (6) (home)
Corporate Safety Officer, Tom Siener	716/684-8060 (office)
	(b) (6) (H) (b) (6) (C)
Regional Office Contact, Joe Grojean	206/624-9537 x 297 (office)
	(b) (6) (Cell)
	(b) (6) (Home)